REMARKS

The foregoing amendments and the following remarks are submitted in response to the communication dated March 18, 2008.

Status of the Claims

Claims 1-9 and 12-20 were pending in the present application. By virtue of this response, each of claims 1 and 3 have been amended and new claims 21-22 are now presented. Claims 2, 4, 5, 7-9 and 12-20, which are withdrawn from consideration and/or relate to non-elected species, have been canceled without prejudice. Accordingly, claims 1, 3, 6 and 21-22 are currently presented and under consideration as amended.

Support for the claim amendments can be found generally throughout the specification. In particular, claim 1 has been amended to indicate in part c) that the antibody is a "polyclonal antibody". Basis for this amendment can be found in the specification including on page 3, line 24, page 4, lines 16-17, and in the Examples on page 21, line 1, of the published PCT Application. In addition, claim 1 has been amended to indicate in part b) that the "antigen is untagged" which is supported in the specification including at page 5, line 10. New claims 21 and 22 are directed to a method of claim 1 wherein part b) is performed before parts a) and c) (claim 21) and part b) is followed by a wash step (claim 22). Support for the language of new claims 21-22 is found in the specification, including on page 6, line 7, page 6, lines 17-19 and in the Examples section of the published PCT Application.

With respect to all amendments and canceled claims, Applicant has not dedicated or abandoned any unclaimed subject matter and, moreover, has not acquiesced to any rejections and/or objections made by the Patent Office. Applicant reserves the right to pursue prosecution of any presently excluded claim embodiments in future related applications.

Specification

The Examiner has requested that Applicant review the application, and particularly points to page 20, for spelling error, the use of trademarks, embedded hyperlinks and/or other form of browser-executable code. Applicants have above amended page 20 of the Specification to add appropriate registration marks for each of Alexa Fluor® and Amicon®.

Claim Rejections – 35 USC § 112, First Paragraph

The Examiner rejects claims 1, 3, and 6 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement, the Examiner asserting that the claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The Examiner remarks that "the specification does not appear to provide an adequate written description for all marker which is essentially unique to those cells present in the population because there is a lack of sufficient written description to support the claimed genus of the markers". Applicants respectfully disagree and assert that the specification sets out and describes a number of representative species, including as indicated and recited by the Examiner at page 5 of the Office Action, the species of CD5, CD9, CD10, CD19, CD20, CD21, CD22, CD45 and CD45 RC which provide representative members of the genus of markers that exhibit the property of being present on cells capable of producing an antibody. Further, the skilled artisan can readily determine which cell markers are "essentially unique" to those cells present in the population which are capable of producing an antibody. "Essentially unique" is clearly defined in the specification, including at page 3, lines 31-33, where it states:

> "Essentially unique" includes a marker that is predominantly present on those cells capable of producing antibody compared to other cells types, but not necessarily to the exclusion of all other cell types. Hence, such a marker may also be present on one or two or even three or more other cell types.

This characteristic has been introduced by amendment to claim 1 for clarity and so as to more particularly point out the claimed method and the antibody (ies) and marker (s) of use in said method. Applicants assert that the specification conveys to the skilled artisan that Applicants were in possession of the invention as instantly claimed at the time of filing.

In view of the foregoing remarks and above amendments, Applicants submit that the Examiner's rejections under 35 U.S.C. 112, first paragraph, may properly be withdrawn.

Claim Rejections – 35 USC § 102

Claims 1, 3, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Chang (US Patent 5,213,960). Chang is cited as teaching an enrichment method using FACS comprising labeling a B cell marker with an antibody conjugated to a fluorescent label and the antigen of interest that is labeled with a second antibody conjugated to a fluorescent label. Chang describes the enrichment of a population of B cells which produce an antibody specific for a selected antigen by directly labelling the antigen with a fluorochrome (see Abstract, Column 5 lines 59-60; Column 9 lines 51-62; Examples). The Examiner states that Chang discloses that the antigen of interest is labelled with a second antibody conjugated to a fluorescent label. Applicants respectfully disagree and traverse this rejection. Anticipation is a question of fact – to anticipate a claim a prior art reference must teach or suggest each and every limitation of the claim. If the Examiner's assertion regarding Chang's teaching is correct, the antigen would already be labelled before being brought into contact with the antibody producing cells, in contrast to the method of claim 1 (see below). The fact that the antigen of Chang must be labelled means that the label itself may interfere in the binding between the antigen and the antibody presented by the B-cell. Accordingly, not all cells producing antibodies which bind the antigen will be detected by this method. A relevant technical difference between the method of claim 1 and that of Chang is that the antigen of claim 1 is untagged and not labelled. In particular, the antigen is not even indirectly labelled when incorporated into the method i.e. the antigen is incorporated into the assay in an unlabelled form. In the method of the present invention the unlabelled antigen is incubated with the population of cells producing antibodies and any unbound antigen

is washed away. A labelled polyclonal antibody is then used to detect the antigen bound to the antibodies produced by the population of cells. The cells are then separated by virtue of this label in combination with the labelled essentially unique cell marker antibody described in part (a) of claim 1. Accordingly, in the present invention the antigen is only labelled *once the antigen has been allowed to bind* to the antibodies being produced by the population of cells. An important technical effect of this difference is that there is no loss of affinity between the antibodies and antigen and no epitope-masking or modification due to label interference that can occur through direct or indirect tagging or labelling of the antigen. The advantage of this approach therefore is that in principal essentially all cells producing an antibody that binds to the antigen of interest should be detected, as all epitopes on the antigen are available for binding and are not disrupted by any kind of labelling. In addition, another key feature of the method of the present invention is the use of a polyclonal antibody in part (c). Given that the antibodies produced by the different antibody producing cells may bind the antigen at many different epitope sites it is important that the labelled antibody used in part (c) is able to detect all the antigen that has been bound by the cells such that all the cells are detected. This would not be possible if a monoclonal antibody was used as this would only bind a single epitope on the antigen and if this epitope was already bound by the antibodies produced by the cells, these cells would go undetected. Chang makes no suggestion that the antigen should be untagged or unlabelled when brought into contact with the antibody producing cells, nor does Chang recognise the advantage of using a polyclonal antibody to label the antigen once bound to the antibodies produced by those cells. Applicants respectfully submit that Chang does not anticipate claims 1, 3, and 6, because the reference fails to disclose or suggest all elements of claims 1, 3, and 6, as amended.

In view of the foregoing remarks and above amendments, Applicants submit that the Examiner's rejection under 35 U.S.C.102 (b) may properly be withdrawn.

Claim Rejections – 35 USC § 103

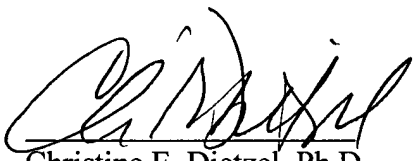
Claims 1, 3, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang (US Patent 5,213,960) in view of Brezinsky et al (JIM 2003, 277:144-155, cited on IDS). Chang is described above. The Examiner notes that Chang differs from the present claims in that it does not explicitly teach "at least one wash step" in the enrichment method. The Examiner asserts, however, that it would have been obvious to a person of ordinary skill in the art to include at least one wash step in the method of enriching a population of cells using FACS because it was well known at the time of the invention to include wash steps in any immunoassays. Brezinsky et al is cited and applied as teaching washing antibody-producing cells before and after labeling in a method of enrichment FACS. The Examiner argues that one of skill in the art would have been motivated to wash the cells before and after labeling during the assays to reduce background signals. Applicants respectfully traverse this rejection. Chang is discussed above and does not teach or suggest all the elements of any of claims 1, 3 or 6, particularly as above amended. The combination of Brezinsky to suggest a wash step does not combine to teach or make obvious all the elements of the methods of claims 1, 3, or 6. Chang alone or even in combination with Brezinsky fails to provide any specific disclosure or even a suggestion of the combination of features and steps disclosed in the method(s) of claims 1, 3 and 6, particularly as above amended.

In view of the foregoing remarks and above amendments, Applicants submit that the Examiner's rejections under 35 U.S.C.103 (a) may properly be withdrawn.

CONCLUSION

Applicants respectfully request entry of the foregoing amendments and remarks in the file history of the instant Application. The Claims as amended are believed to be in condition for allowance, and reconsideration and withdrawal of all of the outstanding rejections is therefore believed in order. Early and favorable action on the claims is earnestly solicited.

Respectfully submitted,
KLAUBER & JACKSON, LLC



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